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ESTIMATES OF DAMAGE BY THE EUROPEAN CORN BORER IN 1939

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Gross estimates have been calculated of the amount of damage, in dollars, caused to corn in 1939 by the European corn borer (*Pyrausta nubilalis* Hbn.) over practically two-thirds of the area infested by the insect in the United States. Although these estimates are approximate, they present a fairly reliable picture of the current economic importance of the corn borer over a wide area of its distribution.

It is estimated that the European corn borer in 1939 caused a loss of almost \$4,000,000 to the corn crop valued at approximately \$106,000,000, produced in 285 counties in the Northeastern States. Based on less extensive data, the estimated loss to corn by the borer in 1938 was placed conservatively between 2 and 2½ million dollars.

The damage estimates in 1939 were calculated in the same way as in 1938^{1/} and in other previous years. The percentage of loss of yield was obtained by applying established damage indices to the data on county abundance of the corn borer determined in the fall survey of 1939^{2/}. Data on corn production were taken from the 1935 Agricultural Census and seasonal market quotations on corn, contributed by the Agricultural Marketing Service of the United States Department of Agriculture in Washington and in the field, and by several State and city marketing agencies.

In the calculations the following prices were utilized, the 1939 quotations for corn harvested for grain being preliminary and the prices of sweet corn being averages of daily quotations for the crop marketing season.

Corn harvested for grain, cents per bushel: Maine, New Hampshire, and Virginia, 72; Vermont, Rhode Island, and Connecticut, 71; Massachusetts, 70; New York, 69; New Jersey, 66; Pennsylvania, 65; Delaware and Maryland, 62; Michigan, 54; Ohio and Wisconsin, 53; Indiana, 50.

Sweet corn, cents per dozen ears: Connecticut, eastern New York, and north-eastern Pennsylvania, 17; Massachusetts, Vermont, New Hampshire, Maine, and Rhode Island, 14; New Jersey, Delaware, Maryland, Virginia, Michigan, western New York,

^{1/} See Insect Pest Survey Bul. v. 19, sup. to No. 8, Oct. 20, 1939.

^{2/} See Insect Pest Survey Bul. v. 19, sup. to No. 9, Dec. 15, 1939.

and northwestern Pennsylvania, 12; Ohio, 11; Indiana and Wisconsin, 8.

Table 1 presents the data on the value of the corn crop and the losses caused by the European corn borer in 1939 within the counties surveyed in each of 16 infested States.

The infested area surveyed in 1939, for which damage estimates have been prepared, comprised 5,274,190 acres of corn harvested for grain, with an estimated crop value of \$87,474,526, and 181,454 acres of sweet corn, with an estimated crop value of \$18,289,286. The combined acreage of grain and sweet corn was 5,455,644, and the estimated crop value of both was \$105,763,812.

The estimated total loss by the European corn borer to the above crop in 1939 was \$3,977,126. This estimated loss was divided as follows: Corn harvested for grain, \$1,846,335 (46.4 percent of the entire loss) and sweet corn, \$2,130,791 (53.6 percent of the entire loss).

In the Lake States area (Ohio, Michigan, Indiana, Wisconsin, northwestern Pennsylvania, and western New York) the loss caused by the corn borer in 1939 to corn harvested for grain was estimated at \$1,582,292 (81.7 percent of the entire loss in that area) and to sweet corn at \$354,328 (18.3 percent of the entire loss), or a total of \$1,936,620.

In the Eastern States area (New England, New Jersey, Delaware, Maryland, Virginia, eastern New York, and northeastern Pennsylvania) the loss caused by the corn borer in 1939 to corn harvested for grain was estimated at \$264,043 (12.9 percent of the entire loss in that area) and to sweet corn at \$1,776,463 (87.1 percent of the entire loss), or a total of \$2,040,506.

The greatest total damage by the corn borer to corn harvested for grain in 1939 occurred in Ohio, Michigan, and Indiana, where the estimated losses were \$853,655, \$491,627, and \$200,687, respectively. The total estimated loss caused by the corn borer to sweet corn in 1939 was highest in Massachusetts, \$614,778, with losses of \$365,858, \$362,473, \$268,913, \$174,743, \$111,989, and \$107,742, respectively, in Connecticut, New York, New Jersey, Michigan, Rhode Island, and Ohio.

Table 1.---Estimates of damage by the European corn borer to corn harvested for grain, and to sweet corn, in 1939

State	Number	Corn harvested for grain				Sweet corn			
		Counties	area surveyed	value of crop	Estimated : loss of crop value	Extent of : area surveyed	Estimated : value of crop	Estimated : loss of crop value	Total estimated loss of crop value
			Dollars	Dollars	Dollars	Acres	Dollars	Dollars	Dollars
Connecticut	8		14,006:	334,587:	55,254:	7,373:	1,001,878:	365,858:	421,112
Delaware	3		136,052:	2,440,357:	7,253:	2,955:	283,680:	1,098:	8,371
Indiana	35		1,532,393:	21,310,251:	200,687:	18,802:	1,203,328:	13,275:	213,962
Maine	13		3,346:	85,201:	221:	11,150:	1,248,800:	5,885:	6,106
Maryland	3		71,010:	960,684:	1,833:	169:	16,224:	68:	1,951
Massachusetts	11		8,509:	249,116:	18,798:	11,364:	1,272,768:	614,778:	633,576
Michigan	31		780,847:	10,557,825:	491,627:	15,315:	1,470,240:	174,743:	666,370
New Hampshire	9		4,072:	122,869:	1,680:	2,365:	264,880:	15,887:	17,567
New Jersey	19		152,117:	3,649,038:	66,973:	28,447:	2,730,912:	268,913:	335,886
New York	48		162,646:	3,860,935:	78,437:	39,481:	4,453,176:	362,473:	440,910
Ohio	59		2,121,643:	37,353,821:	853,655:	26,554:	2,336,752:	107,742:	961,397
Pennsylvania	20		194,443:	4,794,529:	42,087:	11,510:	1,471,480:	76,882:	118,969
Rhode Island	4		2,287:	51,715:	10,473:	1,675:	187,600:	111,989:	122,467
Vermont	14		13,108:	353,373:	7,877:	1,507:	168,784:	11,065:	18,942
Virginia	2		46,707:	798,643:	8,958:	13:	1,248:	42:	9,000
Wisconsin	6		31,004:	501,532:	467:	2,774:	177,536:	93:	560
Total	285		5,274,190:	87,474,526:	1,846,335:	181,454:	18,289,286:	2,130,791:	3,977,126

